## (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

## (19) World Intellectual Property **Organization**

International Bureau





(43) International Publication Date 14 July 2005 (14.07.2005)

**PCT** 

(10) International Publication Number WO 2005/064269 A1

(51) International Patent Classification<sup>7</sup>: G01N 27/72, G01R 27/00

G01B 7/02,

(74) Agent: ABB AB; Forskargränd 8, S-721 78 Västerås (SE).

(21) International Application Number:

PCT/SE2004/001983

(22) International Filing Date:

22 December 2004 (22.12.2004)

(25) Filing Language:

Swedish

(26) Publication Language:

English

(30) Priority Data:

0303610-0

SE 31 December 2003 (31.12.2003)

(71) Applicant (for all designated States except US): ABB AB [SE/SE]; Kopparbergvägen 2, S-VÄSTERÅS 721 83 (SE).

(72) Inventor; and

The Control of the Co

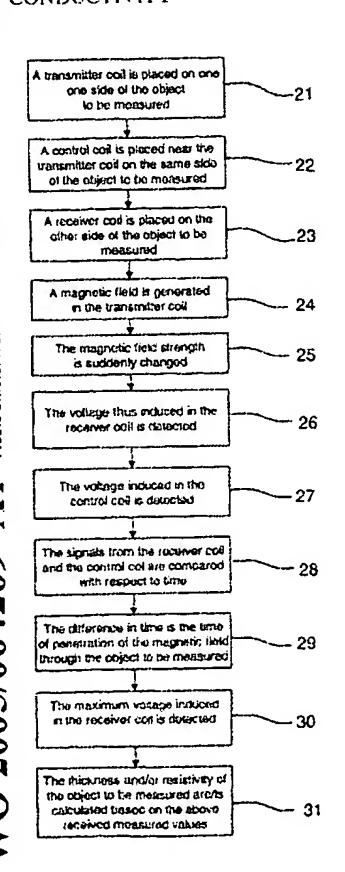
(75) Inventor/Applicant (for US only): LINDER, Sten [SE/SE]; Nybomsgatan 10, S-VÄSTERÅS 723 35 (SE).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO,

[Continued on next page]

(54) Title: A METHOD AND A DEVICE FOR ELECTROMAGNETIC MEASUREMENT OF THICKNESS AND ELECTRICAL CONDUCTIVITY



(57) Abstract: The invention relates to a method for non-contact determination of sought properties of an object to be measured (2), such as, for example, its geometrical dimension or its electrical conductivity, by using electromagnetic induction, and wherein an electromagnetic field is generated in a transmitter coil (3), placed on one side of the object (2) to be measured, and wherein the magnetic field penetrating through the object (2) to be measured is detected by a receiver coil (4) placed on the other side of the object (2) to be measured. The invention comprises: placing a control coil (5) near the transmitter coil (3) generating a change in the magnetic field of the transmitter coil (3), detecting the field change in the control coil (5), detecting the field in the receiver coil (4), determining the difference in time for the detection of the field change in the control coil (5) and in the receiver coil (4), respectively, determining the time of penetration (T2) through the object (2) to be measured, and determining therefrom the thickness or electrical conductivity of the object (2) to be measured.

## 

SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.